

March 5, 2003

HSA-10/CC34B

Rodney A. Boyd
Trinity Industries
2525 Stemmons Freeway
Dallas, Texas 75207

Dear Mr. Boyd:

In his December 6, 2002 letter to Mr. Richard Powers of my staff, Mr. James Albritton submitted information on two modifications made to the previously accepted MPS 350 truck-mounted attenuator (TMA) and reported the results of the two supplementary TMA tests recommended in NCHRP Report 350. Included with his letter were copies of two test reports prepared by the Southwest Research Institute entitled "Full-Scale Crash Evaluation of a Trinity Industries, Inc. Truck Mounted Attenuator – NCHRP Report 350, Optional Test 3-52" and "...Optional Test 3-53", dated May 9, 2002 and November 14, 2002, respectively. Crash test video tapes were also provided.

Both tests were conducted in accordance with NCHRP Report 350 guidelines, with the modified MPS 350 supported by a 9000-kg dump truck with its transmission in second gear and its parking brake set. Test 3-52 consisted of a 2000-kg pickup truck impacting the unit head-on at 100 km/h, but offset 1/3 of the pick-up truck width. Occupant impact velocity was reported to be 7.2 m/sec and the ridedown acceleration was reported to be 18.6 g's. Roll, pitch and yaw were slight to moderate and the support vehicle roll-ahead was 5.3 meters. Test 3-53 consisted of the pickup truck impacting the TMA at 100 km/h at a 10-degree angle with the truck aligned on an offset equal to 1/4 of its width relative to the longitudinal centerline of the attenuator. In this test, the occupant impact velocity was 9.2 m/sec and the ridedown acceleration was 15.1 g's. The roll angle of the pickup truck was reported to be 55 degrees, which I consider marginal but acceptable for this optional test. The support vehicle came to rest 13.7 meters downstream and 15.0 meters to the right of its pre-impact position.

The design changes made to the MPS 350 consisted of widening the steel frame impact fence on the nose of the system from 1.22 meters to 1.75 meters, as shown on the enclosure, and strengthening the attachment between the cutter assemblies and the structural supports that hold the beams down as they are forced underneath the support vehicle in an impact. I agree that these two changes, which add approximately 23 kg to the overall weight of the MPS 350, are not likely to change its original head-on impact performance with either the small car or the pickup truck. Therefore, the modified design remains acceptable as an NCHRP Report 350 test level 3 TMA.

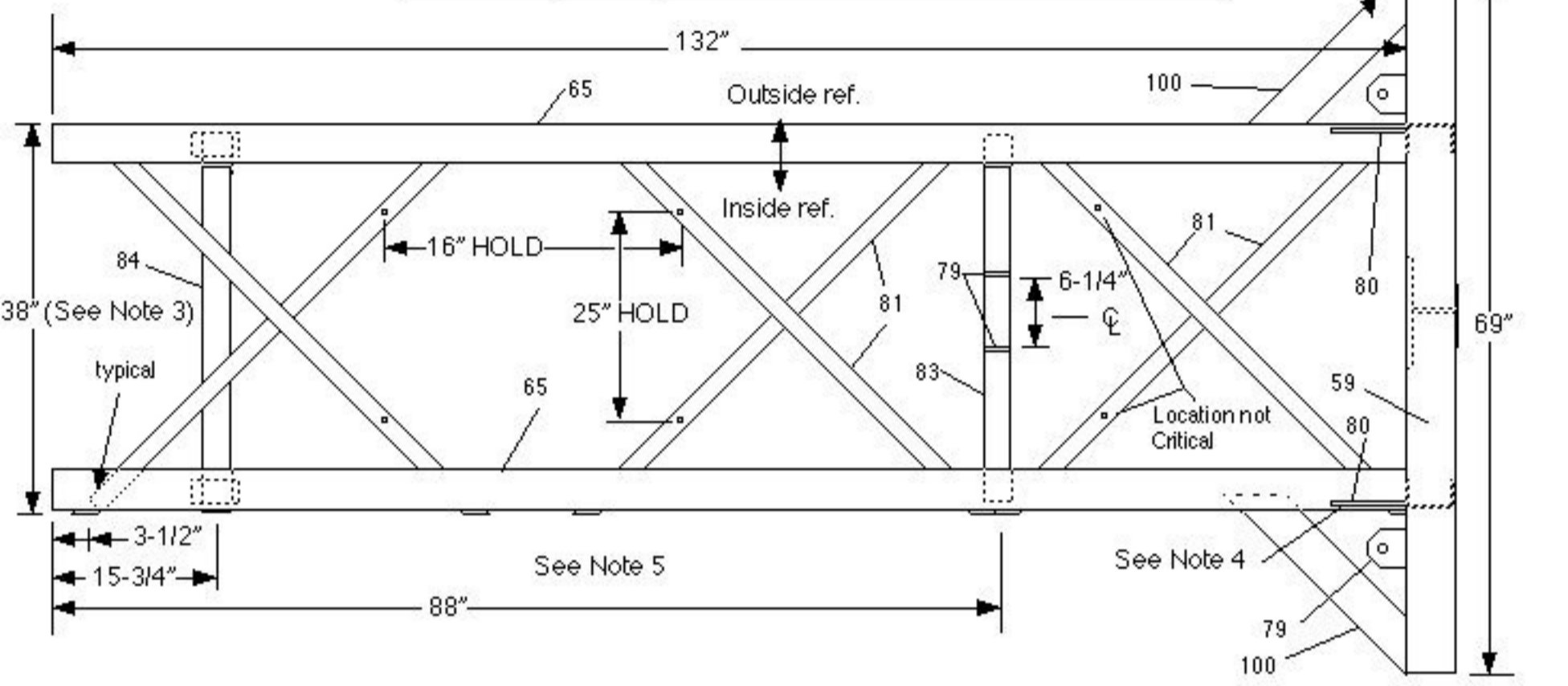
Sincerely yours,

(original signed by Michael S. Griffith)

Michael S. Griffith
Acting Director, Office of Safety Design
Office of Safety

Enclosure

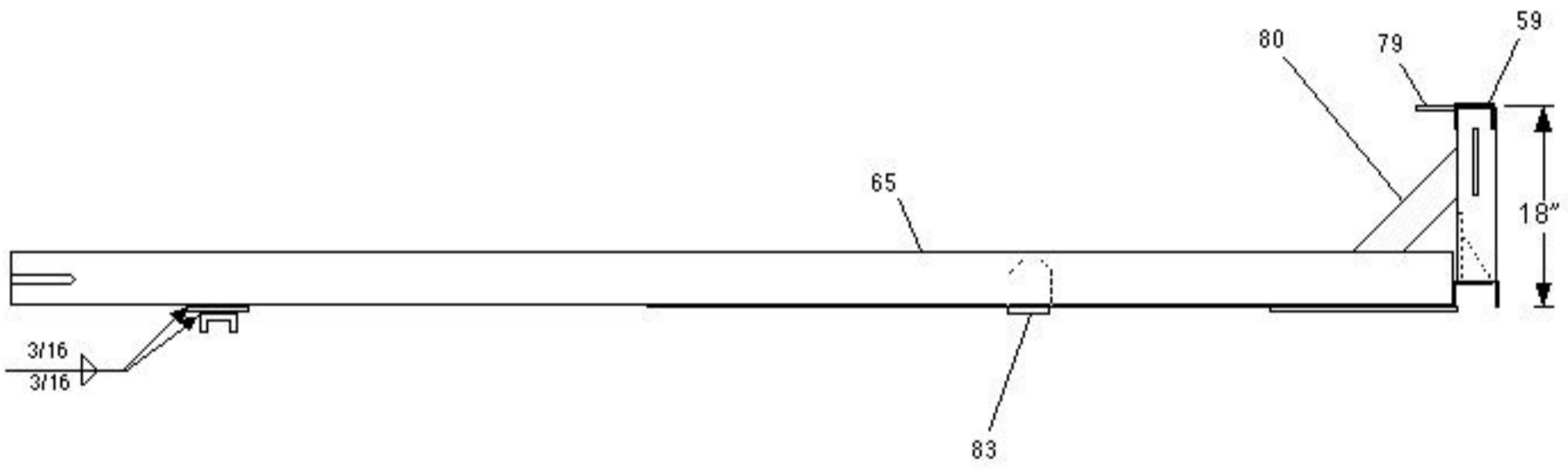
Parts List		
ITEM-PC	Qty	Description
59-7494	1	Impact Fence Weldment
65-7495	2	Main Beam Assembly
79-7474	4	Tab
80-7475	2	1/2" Gusset
81-7476	6	1/4" Flatbar
82-7477	2	1/4" Plate
83-7478	1	1/2" Flatbar
84-7479	1	C 3x4.1 Channel
100	2	1/2"x4"x25"



Note

1. All welds 5/16" fillets except 3/16" fillets on three sides of x-bracing.
2. Crossbraces should be welded on bottom (3/16") where they cross.
3. Dimension from outside of 5" shopmade channels.
4. Align item 80 with outside of C4x5.4 vertical channel on fence.
5. Item 100 welds to bottom of 59 at the farthest extent of channel

Trinity Industries - MPS 350 - III For Company Use Only	
Part Name:	Frame Assembly
Product Code:	960 (Page 1)
Reference Code(s):	959
Date Released:	2-25-02 REV. 7



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